

U.S. Patent Application Serial No. 09/814,183
Amendment dated December 4, 2003
Reply to OA of April 2, 2003

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): A fixing structure for fixing a pin with a link in a caterpillar, the fixing structure comprising:

~~a fixing structure comprising~~ a link; [[,]]

a pin inserted into a pin inserting bore provided on the link [[:]] , the pin formed with a peripherally extending concave groove on an end portion of the pin [[:]] , a peripheral rim of an opening of the pin inserting bore and the peripherally extending concave groove together form forming an annular space;

an escape-preventing ring for limiting relative motion of the pin toward an off-opening side [[is]] being fitted in the annular space and contacting a surface of the groove, further with a hardness of the pin at ~~a bottom~~ the contacted surface of the groove being lower ~~is lowered~~ than that of the pin at a portion with which the link is connected.

Claim 2 (Currently Amended): The fixing structure of claim 1 wherein the hardness of the ~~bottom~~ contacted surface of the peripherally extending concave groove is lowered by an

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annealing process.

Claim 3 (Currently Amended): The fixing structure of claim 1 or 2, wherein the hardness of the ~~bottom~~ contacted surface of the peripherally extending concave groove ranges from 30 to 45 as measured by a HRC scale and the hardness of the link engaging portion ranges from 50 to 65 as measured by a HRC scale.

Claim 4 (Previously Presented): A fixing structure for fixing a pin with a link in a caterpillar, comprising:

a fixing structure comprising a link, a pin inserted into a pin inserting bore provided on the link;

the pin formed with a peripherally extending concave groove on an end portion of the pin;

a peripheral rim of an opening of the pin inserting bore and the peripherally extending concave groove together form an annular space ;

an escape-preventing ring for limiting relative motion of the pin toward an off-opening side is fitted, further a hardness of the pin at a bottom surface of the groove is lowered than that of the pin at a portion with which the link is connected;

wherein the hardness of the bottom surface of the peripherally extending concave groove ranges from 30-45 as measured by a HRC scale.

1 Claim 5 (Previously Presented): A fixing structure for fixing a pin with a link in a
2 caterpillar, comprising:

3 a fixing structure comprising a link, a pin inserted into a pin inserting bore provided on
4 the link;

5 the pin formed with a peripherally extending concave groove on an end portion of the
6 pin;

7 a peripheral rim of an opening of the pin inserting bore and the peripherally extending
8 concave groove together form an annular space ;

9 an escape-preventing ring for limiting relative motion of the pin toward an off-opening
10 side is fitted, further a hardness of the pin at a bottom surface of the groove is lowered than
11 that of the pin at a portion with which the link is connected;

12 wherein the hardness of the link engaging portion ranges from 50 to 65 as measured by
13 a HRC scale.